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ABSTRACT

This study examined prior qualitative differences in the process of the emergence of verb use in two sisters when they were each 12 to 24 months of age (the older sister is 2 years and 9 months older than the younger sister). Daily diaries on both children were kept by the mother, who noted emergent structure and vocabulary. Systematic Analysis of Language Transcripts (SALT) analyses of the data revealed a synchronous pattern of verb acquisition for the older sister and an asynchronous pattern for the younger sister. The form, meaning, and relational function of the older sister's verbs emerged simultaneously between 19 and 20 months of age. In contrast, the integration of the form, meaning, and function of verbs for the younger sister occurred as part of a gradual and incremental process of change in her language production. These results predict that individual differences in children's acquisition of verbs will occur and will co-vary with their chronological age and general approach to language acquisition. (MM)

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# DIFFFERENCES IN TWO SISTERS' ACQUISITION OF FIRST VERBS

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## INTRODUCTION

The purpose of this study is to verify prior qualitative differences in the process of the emergence of verbs that were found in diary data on two sisters, J and L, from 12-24 months. Previous analyses of these data indicate that the timing of the integration of the form, meaning and relational function of J's and L's first verbs differed along a continuum of developmental synchrony to asynchrony. Figure 1 illustrates the difference between the girls in the developmental pattern of the emergence of their first verbs.

Figure 1 compares J's and L's monthly rate of verb and overall lexical acquisition from 15 to 24 months. The intersecting vertical lines labeled SVO specify their respective ages at the time of the sixth spontaneous production of a structurally complete sentence (e.g. J's "Jo tie shoe." at 1;7.17 and L's "Laura do it." at 1;7.3).

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Figure 1

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Table 1 summarizes the developmental interface between 1) the vocabulary spurt, 2) the consistent acquisition of verb lexemes and 3) the ability to produce SVO sentences. These processes emerged synchronously in J's language production and asynchronously in L's.

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Table 1

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The SALT analyses in this study substantiate the developmental difference

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in the process of the emergence of verbs in J's and L's language production. These quantitative descriptions of the data support the earlier finding that the form, meaning and relational function of a verb may, but need not emerge simultaneously in expressive language.

## METHOD

The diary data. J and L are the daughters of college educated parents. J is 2 years and 9 months older than L. The girls' mother, who was their primary caregiver, kept both diaries. The diaries include daily entries of emergent structure and monthly vocabulary lists. Emergent structure was defined as any type of novel language use regardless of the correctness of the form and/or the clarity of the meaning. New words were entered in the daily notes and recorded and dated on the monthly vocabulary lists.

Compiling the cumulative and verb lexicons. Any consistent pairing of a phonetic form with a discernible meaning was counted as a word in compiling the lexicons. Computer-verified cumulative and verb lexicons were derived from cross checking the daily entries against the monthly vocabulary lists.

SALT analyses. Table 2 summarizes the design of the systematic data analyses based on coding portions of the diary data with SALT 1.

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Insert Table 2 Here

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These analyses provide a comparable but delimited sample from the diaries of J's and L's early use of verbs.

The use of the SALT word root lists was modified to make them more sensitive to the development of meaning: 1) Homonyms were counted as separate words (i.e. turn in "my turn" and in "turn on"), 2) variants of the same word with different meanings were counted as separate words (i.e. no to convey denial and no-no to indicate forbidden objects or actions) and 3) variants in the form of a word with the same meaning were counted as a single word (i.e.

dada and daddy for father).

If Brown's (1973) rules are followed MLU is a measure of the child's general level of language acquisition. Given the criterion for entering data into the diaries, MLU is not a measure of ordinary language use. MLU was calculated from 50 or more diary entries and represents a best performance or the zenith of the girls' language production.

## RESULTS

As Tables 3 and 4 illustrate, the SALT analyses reveal a synchronous pattern of verb acquisition for J and an asynchronous pattern for L.

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Table 3

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The form, meaning and relational function of J's verbs emerged simultaneously between 19 to 20 months of age. Her first 50 verb utterances contained 23 verbs. Eighty-three percent (19/23) of these verbs were also new to her lexicon, and there were no errors in word order. Her first SVO sentences occurred within 4 days of her first word combinations with verbs.

In contrast, the integration of the form, meaning and function of verbs for L occurred as part of a gradual and incremental process of change in her language production. Her first 50 utterances with verbs contained 3 verb-like lexemes, cry at 16.8, bark at 16.18 and go at 16.19. L did not seem to know the referential meaning or grammatical function of these verbs at this time. There is an almost 3 month decalage between L's first production of the verb-like lexeme, cry and the production of her first SVO sentence at 19.2. Verbs constituted 19% of her total cumulative lexicon prior to the production of her first SVO sentence, and word order was problematic for her. In sum, the data on L illustrate an initially asynchronous pattern of verb acquisition in which form > referential meaning > combinatorial function in her expressive language.

## DISCUSSION

The results of this study predict that there will be individual difference in children's acquisition of verbs that co-vary with their chronological age and their general approach to language acquisition. The SALT analyses confirm that there were individual differences between the girls in their initial acquisition of verbs. The similarity in the quantitative SALT descriptions of their performance at 24 months fails to indicate that there were still important qualitative differences between J and L in the process of their development of verbs at age 2. An inclusive theory of verb acquisition will have to address the issue of individual differences in development.

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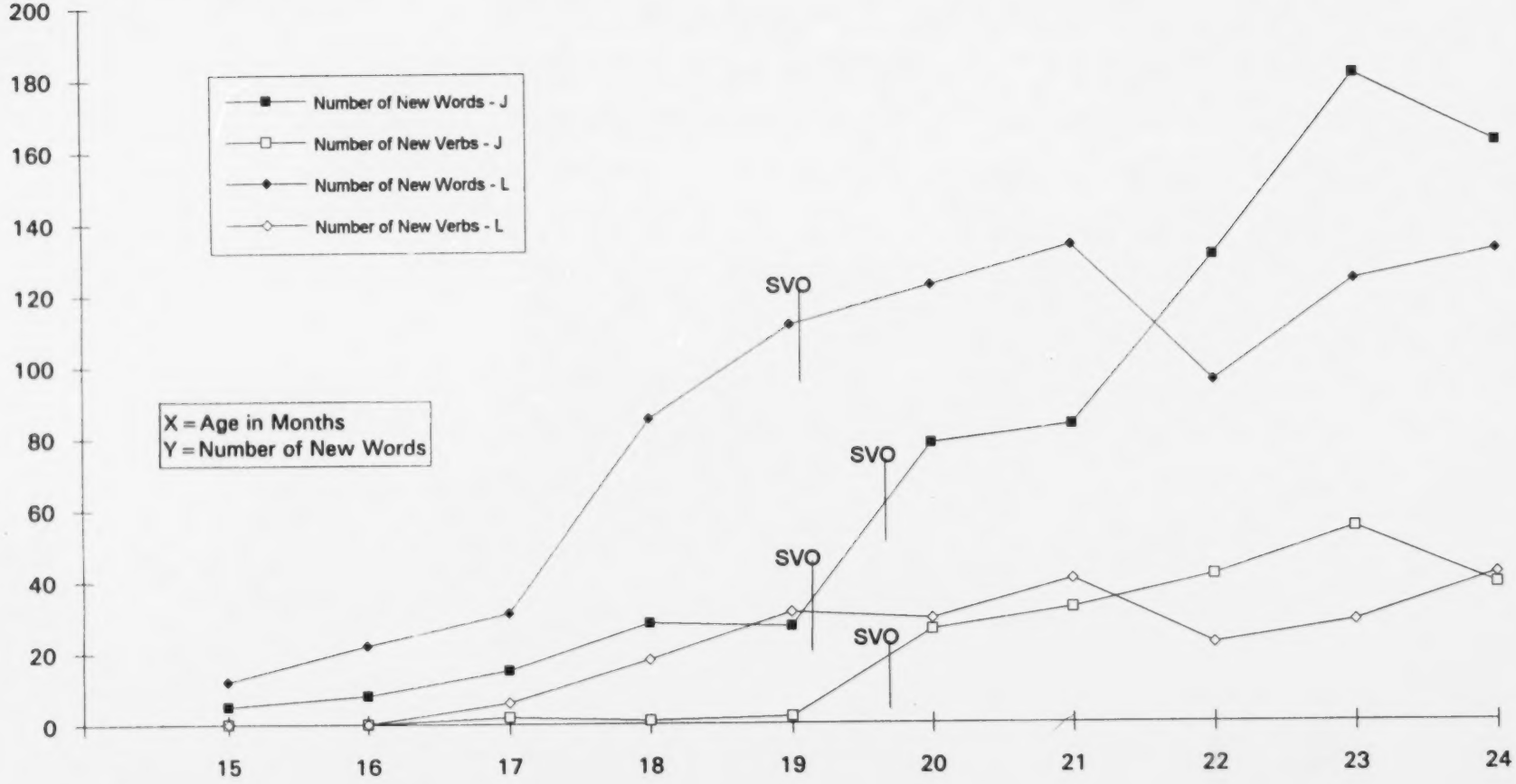


**FIGURE 1. COMPARISON OF THE RATE OF LEXICAL AND VERB ACQUISITION FOR J AND L FROM 15-24 MONTHS**

**Table 1** **Evidence of Individual Differences in the Emergence of First Verbs**

| | J - Synchronous | L - Asynchronous |
|---|---|---|
| **Vocabulary Spurt** | 19-20 months<br>94% (78/83) proportional increase<br>Quintupled (26/5) number of verbs in vocabulary | 17-18 months<br>86% (85/99) proportional increase<br>Tripled (18/6) number of verbs in vocabulary |
| **Emergence of SVO sentences** | 19-20 months - 11 day period<br>(19 months 7 days to 19 months 17 days)<br>First six SVO sentences<br>1. Baby pick flower.<br>2. Mama dada go bye-bye car.<br>3. Timmy eat banana.<br>4. Peaowa (cat) broke balloon.<br>5. Peaowa (cat) fight black cat.<br>6. Jo tie shoe. | 19-20 months - 2 day period<br>(19 months 2 days to 19 months 3 days)<br>First six SVO sentences<br>1. Laura sit chair.<br>2. Gluck (babysitter) change Laura.<br>3. Sue clean me.<br>4. Sue clean me.<br>5. Gluck MeMe bite you. (Meme at Mrs. Gluck's might bite me.)<br>6. Laura do it. |
| **Total vocabulary at 20 Months** | 161 Words<br>23% (161/715) of total vocabulary at 24 months | 417 Words<br>46% (417/899) of total vocabulary at 24 months |
| **Total Number of Verbs in Vocabulary at 20 Months** | 31 Verbs<br>16% (31/196) of total verbs known at 24 months | 84 Verbs<br>39% (84/215) of total verbs known at 24 months |
| **Proportion of Verbs in Vocabulary at 20 Months*** | 19% Verbs (31/161) | 20% Verbs (84/417) |

*** Important similarity in spite of large difference between J and L in the size of their vocabularies.**

**Table 2** **SALT Comparisons of the Diary Data on J and L**

| Verb Productivity | Control for Sample Size | Control for Developmental Context |
|---|---|---|
| **Time One** | | |
| 1.1 1st 50 spontaneous utterances with a verb lexeme. | 1.2 1st 50 spontaneous utterances of any type beginning with 1st verb lexeme. | 1.3 All emerging language including 1st 50 verb lexemes. |
| **Time Two** | | |
| 2.1 1st 50 spontaneous utterances with a verb after 5th SVO sentence. | 2.2 1st 50 spontaneous utterances of any type beginning after 5th SVO sentence. | 2.3 All emerging language including 1st 50 spontaneous utterances with verbs after 5th SVO sentence. |
| **Time Three** | | |
| 3.1 Last 50 utterances with a verb prior to 24 months. | 3.2 Last 50 spontaneous utterances of any kind including verbs prior to 24 months. | 3.3 All emerging language including last 50 spontaneous utterances with a verb prior to 24 months. |


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Table 3

## SALT Comparisons - J

| | Age | No. of Utterances | TTR* | MLU | % Utterances With Verb | Total verb-types | Total new verb-types** | % New Verbs |
|---|---|---|---|---|---|---|---|---|
| **Time One** | | | | | | | | |
| 1.1 | 19.4 - 22 | 50 | .47 | 2.66 | 100% | 23 | 19 | 83% |
| 1.2 | 19.4 - 15 | 50 | .57 | 2.26 | 56% | 12 | 9 | 75% |
| 1.3 | 19.4 - 22 | 90 | .57 | 2.48 | 57% | 23 | 19 | 83% |
| | | | .51 | | | | | |
| **Time Two** | | | | | | | | |
| 2.1 | 19.17 - 20.5 | 50 | .44 | 3.14 | 100% | 30 | 19 | 63% |
| 2.2 | 19.17 - 26 | 50 | .47 | 2.94 | 60% | 22 | 15 | 68% |
| 2.3 | 19.17 - 20.5 | 83 | .47 | 2.87 | 60% | 30 | 19 | 63% |
| | | | .40 | | | | | |
| **Time Three** | | | | | | | | |
| 3.1 | 23.23 - 24.0 | 50 | .63 | 4.20 | 100% | 33 | 7 | 21% |
| 3.2 | 23.24 1/2 - 24.0 | 50 | .67 | 3.66 | 76% | 28 | 6 | 21% |
| 3.3 | 23.23 - 24.0 | 70 | .65 | 3.60 | 71% | 33 | 7 | 21% |
| | | | .62 | | | | | |

*calculated for the first 50 utterances and all utterances

Table 4

## SALT Comparisons - L

| | Age | No. of Utterances | TTR* | MLU | % Utterances With Verb | Total verb-types | Total new verb-types** | % New Verbs |
|---|---|---|---|---|---|---|---|---|
| **Time One** | | | | | | | | |
| 1.1 | 16.8 - 19 | 50 | .07 | 2.02 | 100%** | 3 | 3 | 100% |
| 1.2 | 16.8 - 9 | 50 | .21 | 1.90 | 44%** | 1 | 1 | 100% |
| 1.3 | 16.8 - 19 | 154 | .21 | 1.90 | 32%** | 3 | 3 | 100% |
| | | | .18 | | | | | |
| **Time Two** | | | | | | | | |
| 2.1 | 19.2 - 5 | 50 | .36 | 2.70 | 100% | 20 | 6 | 30% |
| 2.2 | 19.2 - 4 1/2 | 50 | .41 | 2.72 | 50% | 13 | 4 | 30% |
| 2.3 | 19.2 - 5 | 91 | .41 | 2.53 | 55% | 20 | 6 | 30% |
| | | | .39 | | | | | |
| **Time Three** | | | | | | | | |
| 3.1 | 23.29 - 24.0 | 50 | .48 | 4.02 | 100% | 36 | 4 | 11% |
| 3.2 | 23.30 - 24.0 | 50 | .51 | 3.78 | 70% | 25 | 2 | 7% |
| 3.3 | 23.29 - 24.0 | 68 | .48 | 3.68 | 74% | 36 | 4 | 11% |
| | | | .47 | | | | | |

*calculated for the first 50 utterances and all utterances

**includes utterances with hi and a verb (e.g. Hi cry)